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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,449	11/21/2003	Jack Wang	OP-092000263	8070
46103	7590	10/31/2005	EXAMINER	
HDSL			HOFFBERG, ROBERT JOSEPH	
4331 STEVENS BATTLE LANE			ART UNIT	PAPER NUMBER
FAIRFAX, VA 22033			2835	

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/717,449	WANG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Robert J. Hoffberg	2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 21 November 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 5-11 is/are allowed.
- 6) Claim(s) 1 and 4 is/are rejected.
- 7) Claim(s) 2 and 3 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 21 November 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Detailed Action***

***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “first gap” and the “locking member” in Claim 1 are not distinctly shown and must be shown or the feature(s) canceled from the claim(s). Other claims also do not distinctly show every feature of the invention specified in the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Lee et al. (US 2003/0106670).

With respect to Claim 1, Lee et al. teaches a fastening structure of a heat sink (Fig. 1, #10) having a plurality of fins (Fig. 1, #14) spaced from each other by a first gap (Fig. 1, #16), the fastening structure comprising a pair of locking members (Fig. 1, #30), and each of the locking members including at least one resilient flap (Fig. 1, #32) to be inserted into one of the first gaps.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (US 2003/0106670) as applied to claim 1 above, and further in view of Arrigotti et al. (US 6,734,371).

With respect to Claim 4, Arrigotti et al. teaches the fastening structure of claim 1 and a pair of hooks (Fig. 1, #42). Lee et al. does not teach a pair of loops engageable with the hooks. Arrigotti et al. teaches a pair of loops (Fig. 1, #48) engageable with the hooks (Fig. 1, #44). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the fastening structure of Lee et al. with that of Arrigotti et al. for the purpose of providing a mounting arrangement for the heat sink to attach to its mating structure.

***Allowable Subject Matter***

6. Claims 5-11 are allowed.

The following is an examiner's statement of reasons for allowance: The allowability resides in the overall structure of the apparatus as recited in independent claim 5, and at least in part, because claim 5 recites a fastening structure including a "fastening structure to secure a heat sink to a heat generating device on a board, the heat sink includes a plurality of vertically extending fins spaced by each other by a first gap" including "a pair of blocking members, each comprising: a horizontal plate; a pair of arms extending from two opposing sides of the horizontal plate, each of the arms terminated with a hook", "a pair of loops formed on the board, the loops being positioned and configured to be engageable with the hooks", "a vertical plate extending perpendicularly from one end of the horizontal plate", "a pair of wings extending from two opposing sides of the vertical plates" and "a pair of resilient flaps extending from top edges of the wings".

The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render said independent claim 5 and all claims dependent therefrom patentable over art of record.

The closest references to the present invention are believed to be as follows:

Gerber (US 6,130,821) teaches a fastening device (Fig. 2) to attach a "heat sinks" to a heat generating device on a board which is close to the fastening structure claimed but lacks the structure and arrangement of "loops formed on the board" and "a pair of wings" and "a pair of flaps" as in claim 5. Lee et al. (US 2003/0106670) teaches a fastening structure (Fig. 3) to attach a heat sink to a heat generating device on a board which is close to the fastening structure claimed but lacks the structure and arrangement of "loops formed on the board" and "a pair of wings" and "a pair of flaps" as in claim 5.

7. Claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is an examiner's statement of reasons for allowance: The allowability resides in the overall structure of the apparatus as recited in dependent claim 2, and at least in part, because claim 2 recites a fastening structure including "vertical plate", "the flap extending from a top edge thereof" and "a pair of wings extending from two opposing side edges thereof".

8. The following is a statement of reasons for the indication of allowable subject matter: Claim 26 is allowable over the art of record because the prior art does not teach or suggest that "the second portion to engage a printed circuit board is a tubular

member includes threads to threadedly secure said second portion to engage a heat sink and slides within the first portion". The closest references to present invention are believed to be Gerber (US 6,130,821) and Lee et al. (US 2003/0106670) which lack the structure of flap and wings extending from the top edge of the vertical plate.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arnold et al. (US 4,823,869) teaches a heat sink with a second gap perpendicular to the first gap with the base of the first gap descending toward the outside from the first gap. Chung (US 5,881,800), Blomquist (US 6,061,239), Seo (US 6,181,559), Lo (US 6,370,024) and Hashimoto et al. (US 2002/004424) teach heat sink fastening structures, but they lack the specific structure and arrangement of this application.

None of the cited references, either taken alone or in combination is believed to render the present invention unpatentable as claimed.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert J. Hoffberg whose telephone number is (571) 272-2761. The examiner can normally be reached on 8:30 AM - 4:30 PM Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on (571) 272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJH

*Lia Lea Edmonds*  
USA LEA EDMONDS  
PRIMARY EXAMINER